Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Form PCT/IPEA/416
491Me/Gle		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/EP2004/001648	20.02.2004	03.04.2003
International Patent Classification (IPC) or national classification and IPC		
Applicant		
MASCHINENFABRIK REINHAUSEN GMBH		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *(sent to the applicant and to the International Bureau)* a total of 3 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s))

      _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/001648

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

☐ international search (Rule 12.3 and 23.1(b))

☐ publication of the international application (Rule 12.4)

☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1-8 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

nos. _____ as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* 1-16 received by this Authority on 14.01.2005 with letter of 11.01.2005

nos.* _____ received by this Authority on _____

☒ the drawings:

sheets 1/16-16/16 as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing *(specify)*: _____

☐ any table(s) related to sequence listing *(specify)*: _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing *(specify)*: _____

☐ any table(s) related to sequence listing *(specify)*: _____

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/001648

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	1-16	YES
	Claims		NO
Inventive step (IS)	Claims	1-16	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents:

D1: 'Stufenschalter Typ M und Ms' July 1993 (1993-07) MASCHINENFABRIK REINHAUSEN XP002281238, Impressum VK 03/93-0793/2000

D2: 'Stufenschalter Typ V' July 1993 (1993-07), MASCHINENFABRIK REINHAUSEN XP002281239, Impressum VK 02/93-0793/2000

D3: DE 197 43 864 C (REINHAUSEN MASCHF SCHEUBECK) 15 April 1999 (1999-04-15)

2 INDEPENDENT CLAIMS

2.1 **Claim 1: D1** is considered the prior art closest to the subject matter of claim 1. D1 discloses (the references in parentheses relate to said document) a multipoint switch for continuously switching between different winding taps of a step-down transformer according to the principle of a resistance high-speed circuit breaker, consisting of a tap selector for the wattless selection of the winding tap which is subsequently to be switched to, consisting in addition of a load

transfer switch for the subsequent rapid switching from the current to the preselected winding tap with short-term switching-on of at least one transition resistor, wherein both the tap selector and the load transfer switch can be activated by the drive during each switching.

The subject matter of claim 1 differs therefore from the multipoint switch known from D1 in that a torque motor with a **3-phase brushless synchronous motor with permanent excitement** is provided as a drive.

2.2 **Claim 6: D2** is considered the prior art closest to the subject matter of claim 1. D2 (the references in parentheses relate to said document) discloses a multipoint switch for the continuous switching between different winding taps of a step-down transformer according to the principle of a resistance high-speed circuit breaker, consisting of a tap selector for the simultaneous selection of the winding tap which is to be switched to, and for the rapid switching from the current to the preselected winding tap with short-term switching-on of at least one transition resistor, and wherein the switching over is performed by a switching element that is operable in a spring-like manner.

The subject matter of claim 6 differs therefore from the multipoint switch known from D2 also in that a torque motor designed as a **3-phase**

brushless synchronous motor with permanent excitement is provided as a drive.

2.3 **Claim 11**: Document **D3** is considered the prior art closest to the subject matter of claim 1. D3 discloses (the references in parentheses relate to said document) a multipoint switch for the continuous switching between different winding taps of a step-down converter according to the principle of a reactor switch, consisting of a tap selector with two load branches between which a vacuum regulator cell is arranged in each phase that is to be switched, consisting of a preselector, consisting of a bypass contact which respectively bridges the vacuum regulator cell and by means of which, in turn, at least one of the two load branches can be connected to the load leakance, and with an energy store which actuates the respective vacuum regulator cell, wherein a single drive is provided which actuates all components in question by means of different gears and by drive shafts.

The subject matter of claim 11 differs therefore from the multipoint switch known from D3 also in that a torque motor designed as a **3-phase brushless synchronous motor with permanent excitation** is provided as a drive.

2.4 The subject matter of claims 1, 6 and 11 is therefore novel (PCT Article 33(2)).

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

2.5 The problem addressed by the present invention can therefore be considered that of simplifying the design of the multipoint switch as per the prior art.

2.6 The solution to this problem proposed in claims 1, 6 and 11 of the present application involves an inventive step (PCT Article 33(3)) because the prior art contains no suggestion as to this solution.

3 DEPENDENT CLAIMS

Claims 2-5, 7-10 and 12-16 are dependent on claims 1, 6 and 11 and therefore likewise meet the PCT novelty and inventive step requirements.

4 INDUSTRIAL APPLICABILITY

The subject matter of the application relates to multipoint switches, which are clearly industrially applicable.